

## AMENDMENTS TO THE CLAIMS

1. (currently amended) A process for obtaining porous propylene polymers optionally containing up to 10% by mol of derived units of at least one alpha-olefin of formula  $\text{CH}_2=\text{CHZ}$  wherein Z is H or a  $\text{C}_2\text{-C}_{10}$  alkyl radical, comprising the step of polymerizing, in a polymerization medium, propylene and optionally said at least one alpha-olefin, under polymerization conditions, in the presence of a catalyst system comprising at least a metallocene compound wherein:
  - a) the catalyst system is supported on an organic porous polymer; and
  - b) at least part of the polymerization reaction is carried out in the presence of hydrogen,

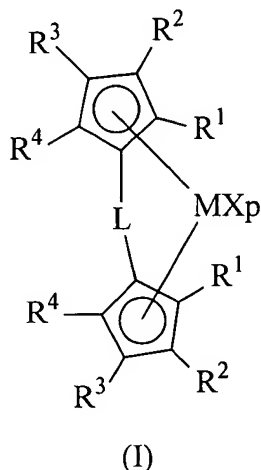
wherein the organic porous polymer support has porosity due to pores with diameter up to  $10\text{ }\mu\text{m}$  ( $100000\text{ }\text{\AA}$ ) higher than  $0.1\text{ cc/g}$ .
2. (previously presented) The process according to claim 1 wherein the polymerization medium is liquid propylene optionally containing minor amounts of an inert hydrocarbon solvent or at least one comonomer of formula  $\text{CH}_2=\text{CHZ}$ .
3. (currently amended) A process for obtaining a porous propylene polymer optionally containing up to 10% by mol of derived units of at least one alpha-olefin of formula  $\text{CH}_2=\text{CHZ}$  wherein Z is H or a  $\text{C}_2\text{-C}_{10}$  alkyl radical, comprising the following steps:
  - a) prepolymerizing in a first polymerization medium propylene optionally with at least one alpha-olefin of formula  $\text{CH}_2=\text{CHZ}$  wherein Z is H or a  $\text{C}_2\text{-C}_{10}$  alkyl radical in the presence of a catalyst system supported on an organic porous polymer, said catalyst comprising a metallocene compound; wherein the first polymerization medium is liquid propylene,

wherein the organic porous polymer support has porosity due to pores with diameter up to  $10\text{ }\mu\text{m}$  ( $100000\text{ }\text{\AA}$ ) higher than  $0.1\text{ cc/g}$ ; and
  - b) contacting propylene and optionally at least one alpha-olefin of formula  $\text{CH}_2=\text{CHZ}$  wherein Z is H or a  $\text{C}_2\text{-C}_{10}$  alkyl radical under polymerization conditions in the presence of hydrogen and the prepolymerized catalyst system obtained in step a), in a second polymerization medium.

4. (previously presented) The process according to claim 3 wherein the second polymerization medium is liquid propylene optionally containing minor amounts of an inert hydrocarbon solvent or at least one comonomer of formula  $\text{CH}_2=\text{CHZ}$ .
5. (canceled)
6. (currently amended) ~~The process according to claim 1~~ A process for obtaining porous propylene polymers optionally containing up to 10% by mol of derived units of at least one alpha-olefin of formula  $\text{CH}_2=\text{CHZ}$  wherein Z is H or a  $\text{C}_2\text{-C}_{10}$  alkyl radical, comprising the step of polymerizing, in a polymerization medium, propylene and optionally said at least one alpha-olefin, under polymerization conditions, in the presence of a catalyst system comprising at least a metallocene compound wherein:
  - a) the catalyst system is supported on an organic porous polymer; and
  - b) at least part of the polymerization reaction is carried out in the presence of hydrogen,

wherein in the organic porous polymer support, a total porosity due to all pores whose diameter is comprised between  $0.1\ \mu\text{m}$  ( $1000\ \text{\AA}$ ) and  $2\ \mu\text{m}$  ( $20000\ \text{\AA}$ ) is at least 30% of a total porosity due to of all pores whose diameter is comprised between  $0.02\ \mu\text{m}$  ( $200\ \text{\AA}$ ) and  $10\ \mu\text{m}$  ( $100000\ \text{\AA}$ ).
7. (previously presented) The process according to claim 1 wherein an amount of hydrogen present during the polymerization reaction is more than 1 ppm.
8. (previously presented) The process according to claim 1 wherein the catalyst system containing the metallocene compound is obtained by reacting:
  - a) the metallocene compound;
  - b) at least an alumoxane or a compound that forms an alkylmetallocene cation; and
  - c) optionally an organo aluminum compound.
9. (previously presented) The process according to claim 8 wherein the catalyst system is supported on an organic porous polymeric support according to a process comprising the following steps:
  - (a) preparing a catalyst solution comprising the catalyst system and a solvent;
  - (b) introducing into a contacting vessel:

- (i) a porous support material in particle form having a total pore volume, and
  - (ii) a first volume of the catalyst solution not greater than the total pore volume of the porous support material introduced;
  - (c) discharging the material resulting from step (b) from the contacting vessel and suspending it in an inert gas flow, under such conditions that the solvent evaporates; and
  - (d) reintroducing at least part of the material resulting from step (c) into the contacting vessel together with a second volume of the catalyst solution not greater than the total pore volume of the reintroduced material.
10. (previously presented) The process according to claim 1 wherein the metallocene compounds belong to formula (I):



wherein

M is a transition metal belonging to group 4, 5 or to the lanthanide or actinide groups of the Periodic Table of the Elements;

the substituents X, equal to or different from each other, are monoanionic sigma ligands selected from the group consisting of hydrogen, halogen,  $R^6$ ,  $OR^6$ ,  $OCOR^6$ ,  $SR^6$ ,  $NR^6_2$  and  $PR^6_2$ , wherein  $R^6$  is a linear or branched, saturated or unsaturated  $C_1$ - $C_{20}$  alkyl,  $C_3$ - $C_{20}$  cycloalkyl,  $C_6$ - $C_{20}$  aryl,  $C_7$ - $C_{20}$  alkylaryl or  $C_7$ - $C_{20}$  arylalkyl group, optionally containing at least one Si and Ge atom;

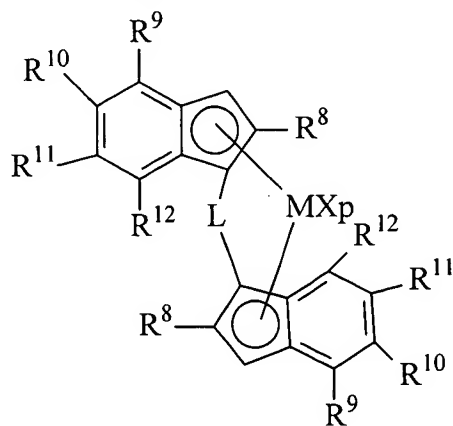
p is an integer equal to the oxidation state of the metal M minus 2;

L is a divalent bridging group selected from  $C_1$ - $C_{20}$  alkylidene,  $C_3$ - $C_{20}$

cycloalkylidene, C<sub>6</sub>-C<sub>20</sub> arylidene, C<sub>7</sub>-C<sub>20</sub> alkylarylidene, or C<sub>7</sub>-C<sub>20</sub> arylalkylidene radicals optionally containing heteroatoms belonging to groups 13-17 of the Periodic Table of the Elements, and silylidene radical containing up to 5 silicon atoms;

R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, equal to or different from each other, are hydrogen atoms, or linear or branched, saturated or unsaturated C<sub>1</sub>-C<sub>20</sub>-alkyl, C<sub>3</sub>-C<sub>20</sub>-cycloalkyl, C<sub>6</sub>-C<sub>20</sub>-aryl, C<sub>7</sub>-C<sub>20</sub>-alkylaryl, or C<sub>7</sub>-C<sub>20</sub>-arylalkyl radicals, optionally containing at least one heteroatom belonging to groups 13-17 of the Periodic Table of the Elements; or two adjacent R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup> form at least one 3-7 membered ring optionally containing heteroatoms belonging to groups 13-17 of the periodic table; said rings can be substituted by at least one hydrocarbon radical containing from 1 to 20 carbon atoms ring optionally containing heteroatoms belonging to groups 13-17 of the periodic table.

11. (previously presented) The process according to claim 10 wherein the metallocene compounds belong to formula (II):



(II)

wherein

R<sup>8</sup>, equal to or different from each other, are linear or branched, saturated or unsaturated C<sub>1</sub>-C<sub>20</sub>-alkyl, C<sub>3</sub>-C<sub>20</sub>-cycloalkyl, C<sub>6</sub>-C<sub>20</sub>-aryl, C<sub>7</sub>-C<sub>20</sub>-alkylaryl, or C<sub>7</sub>-C<sub>20</sub>-arylalkyl radicals, optionally containing at least one heteroatom belonging to groups 13-17 of the Periodic Table of the Elements;

R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup> and R<sup>12</sup>, equal to or different from each other, are hydrogen atoms, linear or branched, saturated or unsaturated C<sub>1</sub>-C<sub>20</sub>-alkyl, C<sub>3</sub>-C<sub>20</sub>-cycloalkyl,

C<sub>6</sub>-C<sub>20</sub>-aryl, C<sub>7</sub>-C<sub>20</sub>-alkylaryl, or C<sub>7</sub>-C<sub>20</sub>-arylalkyl radicals, optionally containing at least one heteroatom belonging to groups 13-17 of the Periodic Table of the Elements; or they can join to form a condensed 4-7 membered ring.

12. (previously presented) A propylene polymer optionally containing up to 10% by mol of derived units of at least one alpha-olefin of formula CH<sub>2</sub>=CHZ wherein Z is H or a C<sub>2</sub>-C<sub>10</sub> alkyl radical having the following features:
  - (i) a melting point >100°C;
  - (ii) a total porosity expressed as percentage of voids %V/V<sub>1</sub> >15; and
  - (iii) a molecular weight distribution Mw/Mn<4.
13. (new) The process of claim 6 wherein the total porosity due to all pores whose diameter is comprised between 0.1 μm (1000 Å) and 2 μm (20000 Å) is at least 40% of a total porosity due to of all pores whose diameter is comprised between 0.02 μm (200 Å) and 10 μm (100000 Å).
14. (new) The process of claim 6 wherein the total porosity due to all pores whose diameter is comprised between 0.1 μm (1000 Å) and 2 μm (20000 Å) is at least 50% of a total porosity due to of all pores whose diameter is comprised between 0.02 μm (200 Å) and 10 μm (100000 Å).